

## Systematic redefinition of *Aphodius (Aphodaulacus) assyricus* Petrovitz, 1971 (Scarabaeoidea, Aphodiidae)

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**Systematic redefinition of *Aphodius (Aphodaulacus) assyricus* Petrovitz, 1971 (Scarabaeoidea, Aphodiidae).** - The taxonomy and the systematic position of *Aphodius (Aphodaulacus) assyricus* (Petrovitz, 1971) are discussed based on new findings of specimens, males included, from Iraq and Iran. The males are easily recognizable mostly by inferior apical spur of mesotibiae notably shortened and apically truncate. New combinations for the species at present considered to belong to the genus *Aphodaulacus* are also formulated.

**Keywords:** Scarabaeoidea - Aphodiidae - *Aphodius* - *Aphodaulacus assyricus* - taxonomy - systematics - new combinations.

### INTRODUCTION

Examination of some specimens of Aphodiidae from Iraq (Karbala) and Iran (Khurasan) indicated that they might be *Aphodaulacus assyricus* (Petrovitz, 1971). This identification was confirmed by a study of the female holotype of that species, thus we here highlight the taxonomy of the taxon and redefine its systematic position.

We also present a list of the species at present placed in the genus *Aphodaulacus*, as defined by the systematic limits established by Dellacasa, G. *et al.* (2001), including new combinations.

### TAXONOMIC TREATMENT

Genus *Aphodaulacus* Koshantschikov W., 1911

*Aphodius (Aphodaulacus)* Koshantschikov, W., 1911: 209; Balthasar, 1964: 209; Dellacasa, M., 1988: 88; Frolov, 2001: 140; Frolov, 2002: 163.

*Aphodaulacus*; Dellacasa G. *et al.*, 2001: 87.

TYPE SPECIES: *Aphodius turkestanicus* Heyden, 1881 (subsequent designation by Balthasar, 1964).

DIAGNOSIS: small or medium size species (length 3.5-9.0 mm), elongate, few shiny, moderately convex; head and pronotum blackish or brownish, glabrous. Pronotum faintly explanate on yellowish sides with lateral margins ciliate or not, hind

angles obtuse, base not bordered or with border widely interrupted at middle. Scutellum small, triangular. Elytra yellowish with several blackish or brown-reddish spots, entirely or, at least laterally and apically, pubescent, the pubescence recumbent toward apex. Hind tibiae apically fimbriate with spinules irregularly elongate. Sexual dimorphism shown in males mainly by head and pronotum relatively more transverse, by elytra usually entirely pubescent and by inferior apical spur of middle tibiae notably shortened.

DISTRIBUTION: Palaearctic Region.

REMARKS: with the exception of the type species, *Aphodaulacus turkestanicus* (Heyden, 1881), we create the **new combinations** for the following taxa:

*assyricus* (Petrovitz, 1971) [ex *Aphodius*], Iran, Iraq; *balachanicola* (Balthasar, 1973) [ex *Aphodius*], Turkmenistan; *grumi* (Frolov, 2002) [ex *Aphodius*], China; *ignobilis* (Reitter, 1897) [ex *Aphodius*], China, Uzbekistan; *kabaki* (Frolov, 2001) [ex *Aphodius*], China; *kizeritskyi* (Frolov, 2002) [ex *Aphodius*], Turkmenistan; *nigrotesselatus* (Motschulsky, 1866) [ex *Aphodius*], China, Russia (Siberia); *perblandus* (Balthasar, 1933) [ex *Aphodius*], China; *stomachosus* (Balthasar, 1970) [ex *Aphodius*], Afghanistan; *variabilis* (Waterhouse, 1875) [ex *Aphodius*], Japan.

*Aphodaulacus assyricus* (Petrovitz, 1971)

Figs 1-7

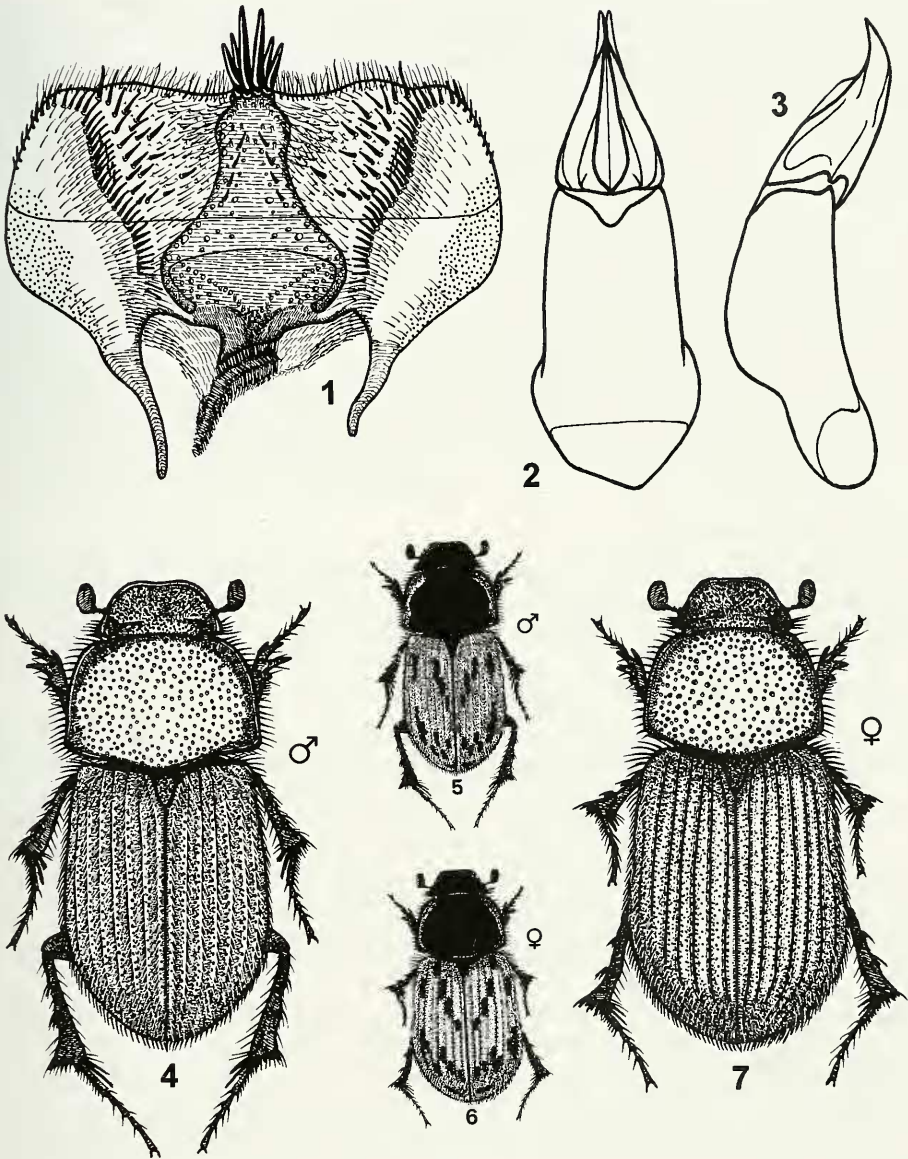
*Aphodius* (*Aphodaulacus*) *assyricus* Petrovitz, 1971: 218.

MATERIAL EXAMINED: Assur, Mesopotam[ia] (Iraq), holotype female, Petrovitz Collection, Geneva Museum – Karbala, Ukhaydir, Iraq, 14.04.1984, 1 male; Dellacasa Collection, Genova – Khurasan, Bojnurd env., Iran, 14.05.1991, G. Gorbani leg., 1 male, 2 females – Dellacasa Collection, Genova.

TYPE LOCALITY: Assur, Mesopotam[ia] [Iraq].

TYPE DEPOSITORY: Muséum d'histoire naturelle, Geneva.

DESCRIPTION: length 5.0-7.0 mm, elongate, moderately convex, shiny; head and pronotum glabrous, elytra more or less diffusely pubescent. Head and pronotum brownish-red, the former distally, the latter laterally yellowish; scutellum brownish; elytra yellowish with several brownish-red spots variously arranged; legs brown-yellowish, antennal club brownish. Head with epistoma feebly gibbous; clypeus subtruncate anteriorly, rounded at sides, rather thickly bordered, the border glabrous; genae elongately ciliate, strongly protruding more than eyes; frontal suture finely impressed; front regularly punctured. Pronotum transverse, evenly punctured; lateral margins thickly bordered, the border elongately ciliate; hind angles distinct, obtusely rounded, base faintly bisinuate, thinly bordered, sometimes the border extremely fine at middle. Scutellum elongately triangular, somewhat depressed at middle, sparsely punctured mostly laterally and basally. Elytra shiny, rather convex; striae fine, superficially punctured, subcrenulate; interstices feebly convex; epipleural margin entirely, rather elongately ciliate. First segment of hind tarsi near as long as following three combined. Male: head relatively larger, with epistoma alutaceous, finely subregularly punctured; genae subacutely angulate; frontal suture feebly trigibbous; pronotum relatively wider, less convex, not narrowed anteriorly, relatively more regularly and sparsely punctured; elytra parallel-sided, interstices minutely roughly punctured, entirely



FIGS 1-7

*Aphodaulacus assyricus* (Petrovitz, 1971) (Karbala, Ukhaydir, Iraq): 1. Epipharynx; 2-3. Aedeagus; dorsal and lateral view; 4-5. Habitus of male; 6-7. Habitus of female.

pubescent, pubescence backwardly recumbent; fore tibiae relatively slender and more elongate, their apical spur stout and abruptly downward curved; inferior apical spur of middle tibiae notably shortened, apically truncate and somewhat bifid; hind tibiae superior apical spur nearly as long as first tarsal segment; latter somewhat longer than

following three combined. Female: head relatively narrower, with epistoma densely, coarsely and regularly punctured; genae smaller; frontal suture faintly raised laterally only; pronotum more convex and narrower anteriorly, more coarsely and somewhat irregularly punctured; elytra regularly oval-elongate; interstices sparsely punctured, only laterally and preapically sparsely and rather shortly pubescent; fore tibiae stouter, their apical spur slender; middle tibiae inferior apical spur not notably shortened, apically obtuse; hind tibiae superior apical spur distinctly shorter than first tarsal segment.

DISTRIBUTION: known only from Iraq and Iran.

REMARKS: in addition to the aedeagal differences, mainly those in paramera (dorsal view), this species may be distinguishable from *Aphodaulacus turkestanicus* by pronotum somewhat flattened laterally and feebly foveolate before hind angles; elytral striae distinctly crenulate and interstices shiny, relatively less densely pubescent and more sparsely punctured; first segment of hind tarsi somewhat longer than following three combined; colour pale testaceous with epistoma, pronotal disc and elytral spots brown-reddish.

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#### REFERENCES

- BALTHASAR, V. 1964. Monographie der Scarabaeidae und Aphodiidae der Palaearktischen und orientalischen Region, Coleoptera Lamellicornia, Aphodiidae. *Verlag der Tschechoslowakischen Akademie der Wissenschaften, Praha*, 3: 1-652.
- DELLACASA, G., BORDAT, P. & DELLACASA, M. 2001. A revisional essay of world genus-group taxa of Aphodiinae. *Memorie della Società entomologica italiana* 79 (2000): 1-482.
- DELLACASA, M. 1988. Contribution to a world-wide Catalogue of Aegialiidae, Aphodiidae, Aulocnemidae, Termitotrogidae. (Part I). *Memorie della Società entomologica Italiana* 66 [1987]: 1-455.
- FROLOV, A. V. 2001. New species of *Aphodius* Illiger, 1798 from China. *Russian entomological Journal* 10(2): 139-141.
- FROLOV, A. V. 2002. New and little known species of *Aphodius* (subgenus *Aphodaulacus*) from Middle Asia and China. *Zoosystematica Rossica* 11: 163-165.
- KOSHANTSCHIKOV, W. 1911. Dritter Beitrag zur Kenntnis der Aphodiini. *Russkoe entomologicheskoe Obozrenie* 11: 205-212.
- PETROVITZ, R. 1971. Scarabaeidae from the Near East. *Israel Journal of Entomology* 6: 215-236.